

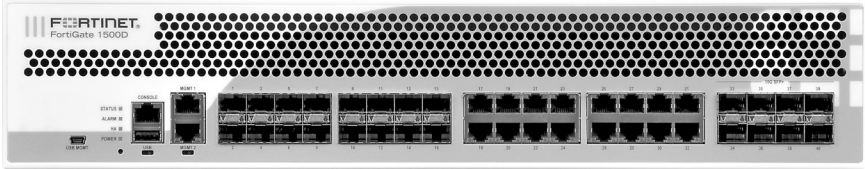
**FORTINET®**



# FortiGate 1500D

Information

# Box Includes



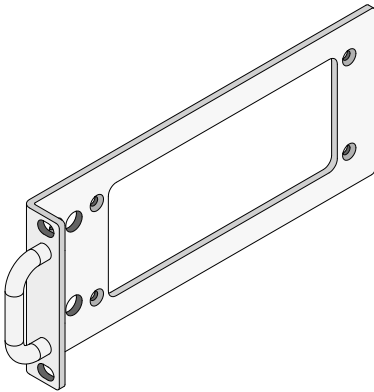
FortiGate 1500D



Information Supplement



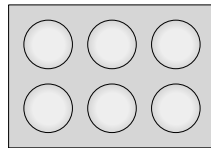
The FortiGate Cookbook



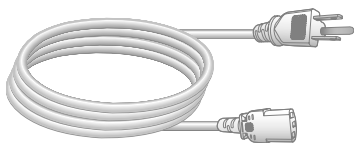
2 Rack-Mount Brackets



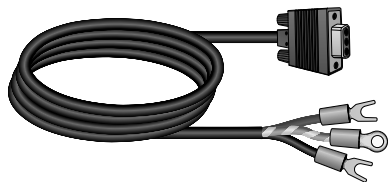
12 Bracket Screws



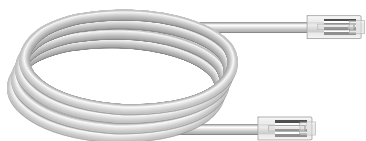
6 Rubber Feet



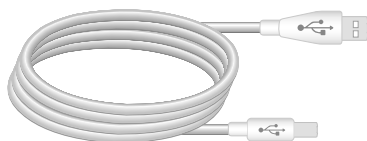
2 AC Power Cables  
(AC models only)



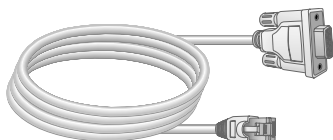
2 DC Power Cables  
(DC models only)



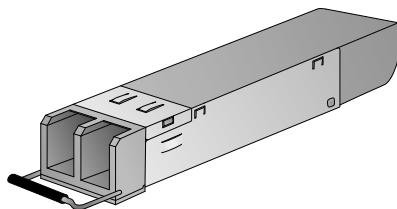
Ethernet Cable



USB Cable



Console Cable



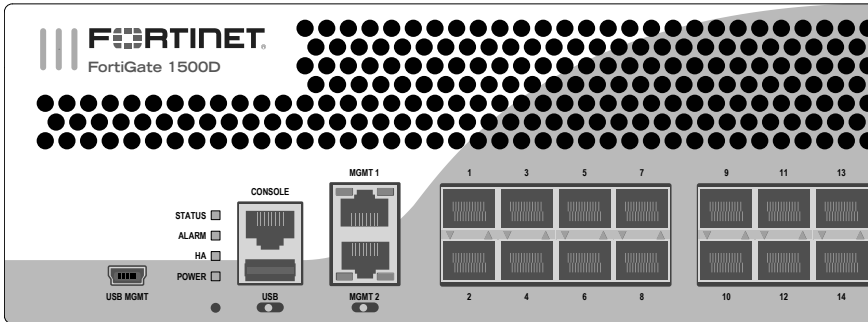
2 SFP+ Transceivers

# FortiGate 1500D

## MGMT Ports (RJ-45)

Client ports for management

Default IP address of MGMT 1 is 192.168.1.99



## USB MGMT (USB mini-B)

USB client port



## Console (RJ-45)

Optional connection to the management computer

Provides access to the CLI



## USB (USB A)

USB server port



## SFP Ports 1 to 16 (SFP)

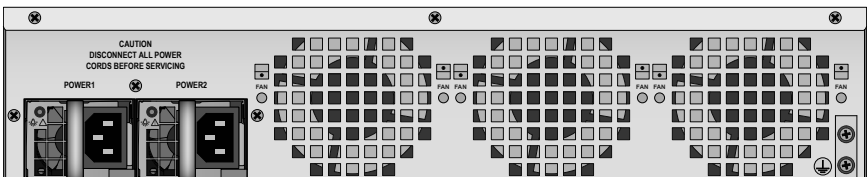
1 Gbps SFP ports



## Power

100-240V AC, 50-60Hz, 8-4A

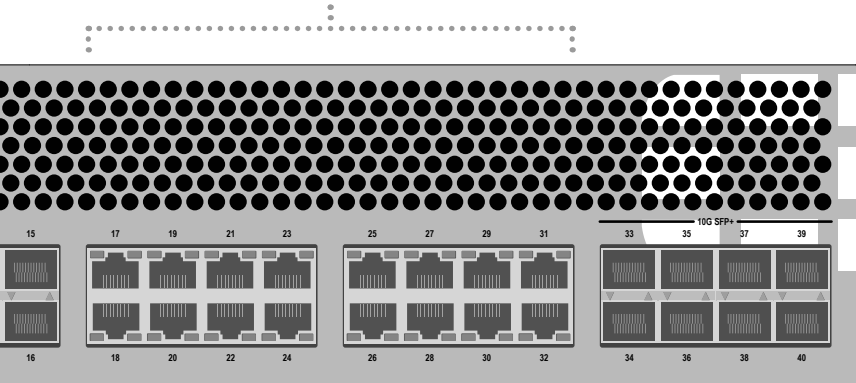
hot swappable, redundant (1+1) power supplies





### Ethernet Ports 17 to 32 (RJ-45)

Gigabit Ethernet local network connections



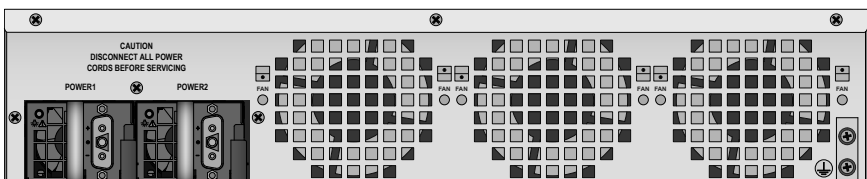
### SFP Ports 33 to 40 (SFP+)

10Gbps SFP ports

### DC Power (DC models only)

-48V DC, 12A

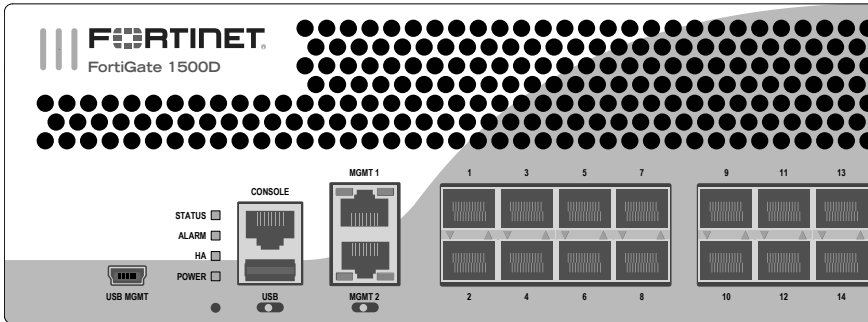
hot swappable, redundant (1+1) power supplies



# FortiGate 1500D

## Logo

- Green: The unit is on
- Off: The unit is off



## Status

- Green: Normal
- Flashing Green: Booting up
- Red: Major alarm

## Alarm

- Red: Major alarm
- Amber: Minor alarm
- Off: No alarms

## HA

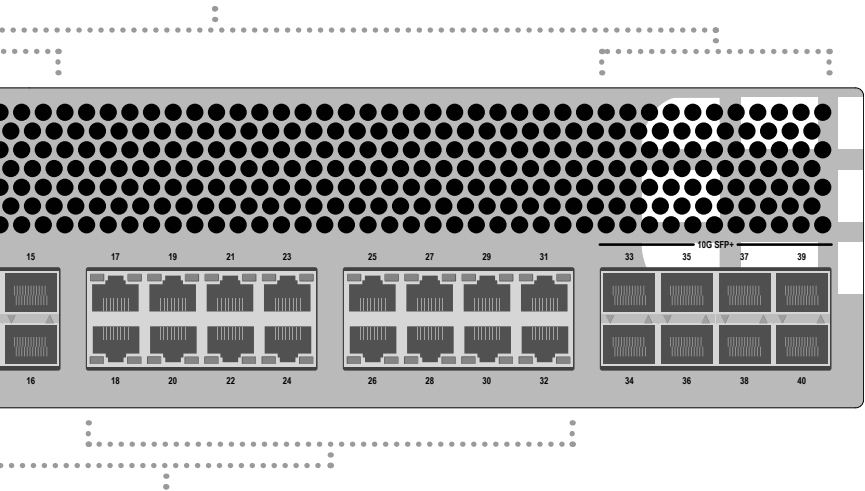
- Green: Operating in an HA cluster
- Red: HA failure
- Off: HA disable

## Power

- Green: The unit is on
- Off: The unit is off

**SFP Ports**

- Green: Connected
- ◉ Flashing Green: Transmitting & receiving data
- Off: No link established



**Ethernet Ports Link/Activity**

- Green: Connected
- ◉ Flashing Green: Transmitting & receiving data
- Off: No link established

**Ethernet Ports Speed**

- Green: Connected at 1Gbps
- Amber: Connected at 100Mbps
- Off: Connected at 10Mbps or not in use

# Installation

The FortiGate unit can be mounted in any standard 19 inch rack unit with the provided rack-mount brackets and screws. AC models can also be surface mounted with the provided rubber feet.

Please read the “Cautions and Warnings” on page 12 before installing your device.

**Caution:** Electrostatic discharge (ESD) can damage your Fortinet equipment.

To avoid personal injury or damage to the unit, it is recommended that two or more people install the unit into the rack.

Please consult a licensed electrician before connecting this product to a DC power source, or hire a licensed electrician to perform all connections (DC models only).

Do not place heavy objects on the unit.

**Note:** Each power cable should be connected to a different power source. In this way, if one power source fails, the other may still be operational and the unit will not lose power.

This product has a separate protective earthing terminal provided on the back of the product in addition to the grounding terminal of the attachment plug. This separate protective earthing terminal must be permanently connected to earth with a green with yellow stripe conductor minimum size **6 AWG** and the connection is to be installed by a qualified service personnel.

## **DC models only:**

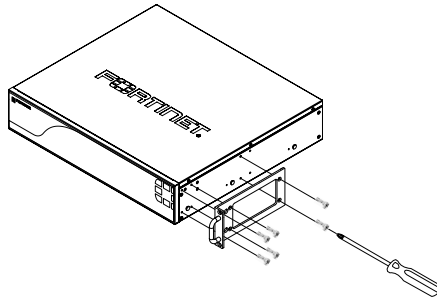
**Note:** The DC power cables are intended to be used only for in-rack wiring, must be routed away from sharp edges, and must be adequately fixed to prevent excessive strain on the wires and terminals.

DC cables must be a minimum of **12 AWG**.

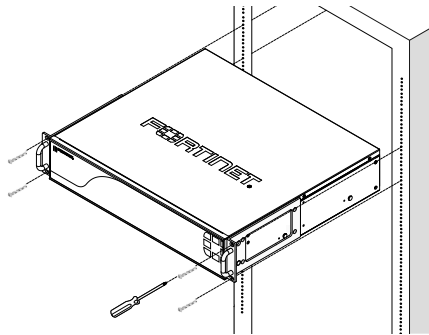


## To install the FortiGate unit into a rack

1. Attach the provided rack-mount brackets to the sides of the unit using the provided screws.



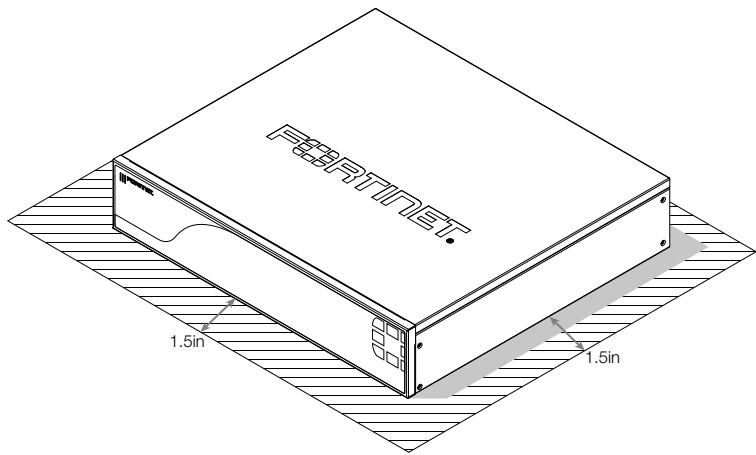
2. Position the FortiGate unit in the rack. Ensure there is enough room around the unit to allow for sufficient air flow.
3. Line up the rack-mount bracket holes to the holes on the rack and ensure that the FortiGate unit is level.



4. Finger tighten four rack-mount screws to attach the unit to the rack.
5. Verify that the spacing around the FortiGate unit conforms to requirements and that the unit is level, then tighten the rack-mount screws with an appropriate screwdriver.
6. Plug the provided power cables into the rear of the unit, and then into separate grounded electrical outlets or power sources, such as uninterruptible power supplies (UPS) or power distribution units (PDU).

## To install the unit on a flat surface

1. Ensure that the surface onto which the FortiGate unit to be installed is clean, level, and stable and that there is at least 1.5in (3.8cm) of clearance on all sides to allow for adequate airflow.
2. Attach the provided rubber feet to the bottom of the FortiGate unit.
3. Place the unit in the designated location.
4. Verify that the spacing around the FortiGate unit conforms to requirements and that the unit is level.



5. Plug the provided power cables into the rear of the unit, and then into separate grounded electrical outlets or power sources, such as UPS or PDUs.

## Specifications

Parameter	Min	Avg	Max	Unit
Max Inrush Current			50	A
Max Inrush Current Duration			20	ms
Current @ 48V		7	8.4	A
Input Voltage	-40.5		-57	V DC
Power Consumption		336	403.2	W
Heat Dissipation			1375	BTU/hr
Number of Power Supplies	1		2	
Airflow	Front to Back			

## Crimping guidelines

The end of the #6 AWG ground wire must be fitted with a suitable 5/8-inch double-hole lug. Use the following information to crimp and prepare the wire.

**Caution:** Do not crimp energized wires.

Follow these crimping guidelines:

- Strip the insulation from cable. Be careful not to nick cable strands which may later result in stands breaking.
- Cable end should be clean: wire brush or clean with emery cloth if necessary. Insert cable into connector until it stops. The insertion length must approximate the stripped length of cable.
- Insert connector in die and compress between the markings beginning near the tongue of the connector. Using the wrong installing die may result in a defective connection.
- After crimping, remove all sharp edges, flashes, or burrs.

## Connecting the device to ground

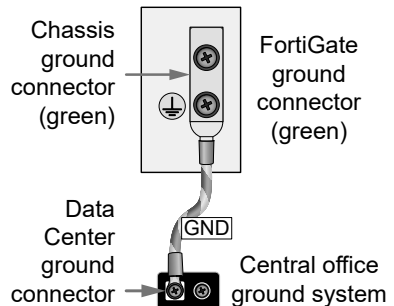
This product has a separate ground terminal provided on the back of the product in addition to the grounding terminal of the attachment plug. The ground terminal provides two connectors to be used with a double-holed lug. This connector must be connected to a local ground connection.

You need the following equipment to connect the device to ground:

- An electrostatic discharge (ESD) preventive wrist strap with connection cord.
- One green with yellow stripe 6 AWG stranded wire with listed closed loop double-hole lug suitable for minimum 6 AWG copper wire.

### To connect the device to ground:

1. Attach the ESD wrist strap to your wrist and to an ESD socket or to a bare metal surface on the device or frame.
2. Make sure that the device and ground wire are not energized.
3. Connect the ground wire from the local ground to the ground connector on the device.
4. Secure the ground wire to the device.
5. Optionally label the wire GND.



## Cautions and Warnings

### Environmental specifications

Ambient operating temperature: 0C to 40C

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions:

Instructions de montage en rack - Les instructions de montage en rack suivantes ou similaires sont incluses avec les instructions d'installation:

Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer. Température ambiante élevée - S'il est installé dans un rack fermé ou à unités multiples, la température ambiante de fonctionnement de l'environnement du rack peut être supérieure à la température ambiante de la pièce. Par conséquent, il est important d'installer le matériel dans un environnement respectant la température ambiante maximale (T<sub>ma</sub>) stipulée par le fabricant.

Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised. Ventilation réduite - Installation de l'équipement dans un rack doit être telle que la quantité de flux d'air nécessaire au bon fonctionnement de l'équipement n'est pas compromise.

Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading. Chargement Mécanique - Montage de l'équipement dans le rack doit être telle qu'une situation dangereuse n'est pas liée à un chargement mécanique inégal.

Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern. Sur tension - Il convient de prendre l'ensemble des précautions nécessaires lors du branchement de l'équipement au circuit d'alimentation et être particulièrement attentif aux effets de la suralimentation sur le dispositif assurant une protection contre les courts-circuits et le câblage. Ainsi, il est recommandé de tenir compte du numéro d'identification de l'équipement.

Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips). Fiabilité de la mise à la terre- Fiabilité de la mise à la terre de l'équipement monté en rack doit être maintenue. Une attention particulière devrait être accordée aux connexions d'alimentation autres que les connexions directes au circuit de dérivation (par exemple de l'utilisation de bandes de puissance).

Refer to specific Product Model Data Sheet for Environmental Specifications (Operating Temperature, Storage Temperature, Humidity, and Altitude).

Référez à la Fiche Technique de ce produit pour les caractéristiques environnementales (Température de fonctionnement, température de stockage, humidité et l'altitude).

## Safety

Moving parts — Hazardous moving parts. Keep away from moving fan blades. Pièces mobiles – Pièces mobiles dangereuses. Se tenir éloigné des lames mobiles du ventilateur.

Warning: A readily accessible disconnect device shall be incorporated in the building installation wiring. Avertissement: Un dispositif de déconnexion facilement accessible doit être incorporé dans l'installation électrique du bâtiment.

Battery – Risk of explosion if the battery is replaced by an incorrect type. Do not dispose of batteries in a fire. They may explode. Dispose of used batteries according to your local regulations. IMPORTANT: Switzerland: Annex 4.10 of SR814.013 applies to batteries.

Batterie – Risque d'explosion si la batterie est remplacée par un type incorrect. Ne jetez pas les batteries au feu. Ils peuvent exploser. Jetez les piles usagées conformément aux réglementations locales. IMPORTANT: Suisse: l'annexe 4.10 de SR814.013 s'appliquent aux batteries.

警告  
本電池如果更換不正確會有爆炸的危險  
請依製造商說明書處理用過之電池

Caution: Disconnect power supply cords before servicing  
Attention: Débranchez les cordons de la source d'alimentation avant tout entretien.

Grounding — To prevent damage to your equipment, connections that enter from outside the building should pass through a lightning / surge protector, and be properly grounded. Use an electrostatic discharge workstation (ESD) and/or wear an anti-static wrist strap while you work. In addition to the grounding terminal of the plug, on the back panel, there is another, separate terminal for earthing.

Mise à la terre — Pour éviter d'endommager votre matériel, assurez-vous que les branchements qui entrent à partir de l'extérieur du bâtiment passent par un parafoudre / parasurtenseur et sont correctement mis à la terre. Utilisez un poste de travail de décharge électrostatique (ESD) et / ou portez un bracelet anti-statique lorsque vous travaillez. Ce produit possède une borne de mise à la terre qui est prévu à l'arrière du produit, à ceci s'ajoute la mise à la terre de la prise.

This product has a separate protective earthing terminal provided on the back of the product in addition to the grounding terminal of the attachment plug. This separate protective earthing terminal must be permanently connected to earth with a green with yellow stripe conductor minimum size # 14 AWG and the connection is to be installed by a qualified service personnel. Ce produit a une borne de mise à la terre séparé sur le dos de l'appareil, en plus de la borne de mise à la terre de la fiche de raccordement. Cette borne de mise à la terre séparée doit être connecté en permanence à la terre avec un conducteur vert avec la taille bande jaune de minimum # 14 AWG et la connexion doit être installé par un personnel qualifié.

Regulatory Notices

Federal Communication Commission (FCC) – USA

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received; including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

**WARNING:** Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

Industry Canada Equipment Standard for Digital Equipment (ICES) – Canada

CAN ICES-3 (A) / NMB-3 (A)

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Cet appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Conformity (CE) - EU

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.



Product Safety Electrical Appliance & Material (PSE) - Japan

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Voluntary Control Council for Interference (VCCI) – Japan

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Bureau of Standards Metrology and Inspection (BSMI) – Taiwan

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

China

此为A级产品，在生活环境中，该产品可能会造成无线电干扰。这种情况下，可能需要用户对其采取切实可行的措施。

Agência Nacional de Telecomunicações (ANATEL) – Brazil

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.



Para maiores consultas sobre ANATEL consulte o site: [www.anatel.gov.br](http://www.anatel.gov.br)

Korea Certification (KC) - Korea

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6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for your own use and reverse engineering for debugging such modifications. You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

- Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)
- Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable. It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

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